

# Thoughts on markets and industry trends

Western Clean Energy Advocates

July 26, 2017 | Denver, CO

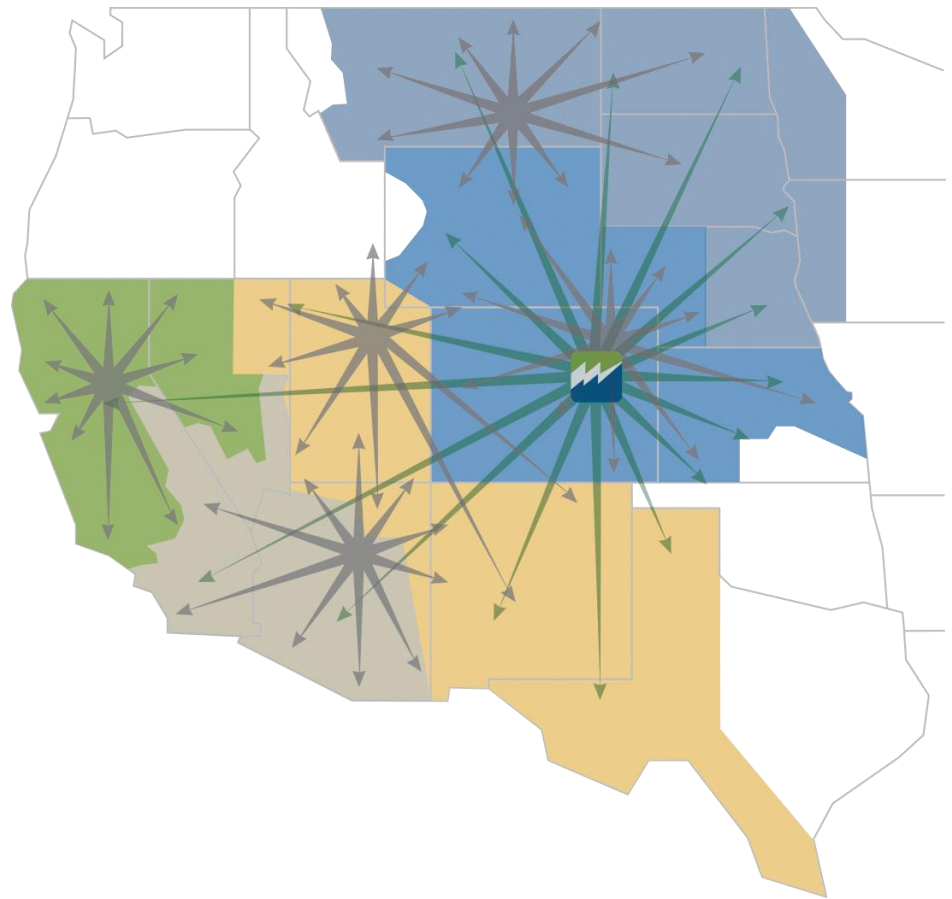
Mark A. Gabriel  
Administrator and CEO



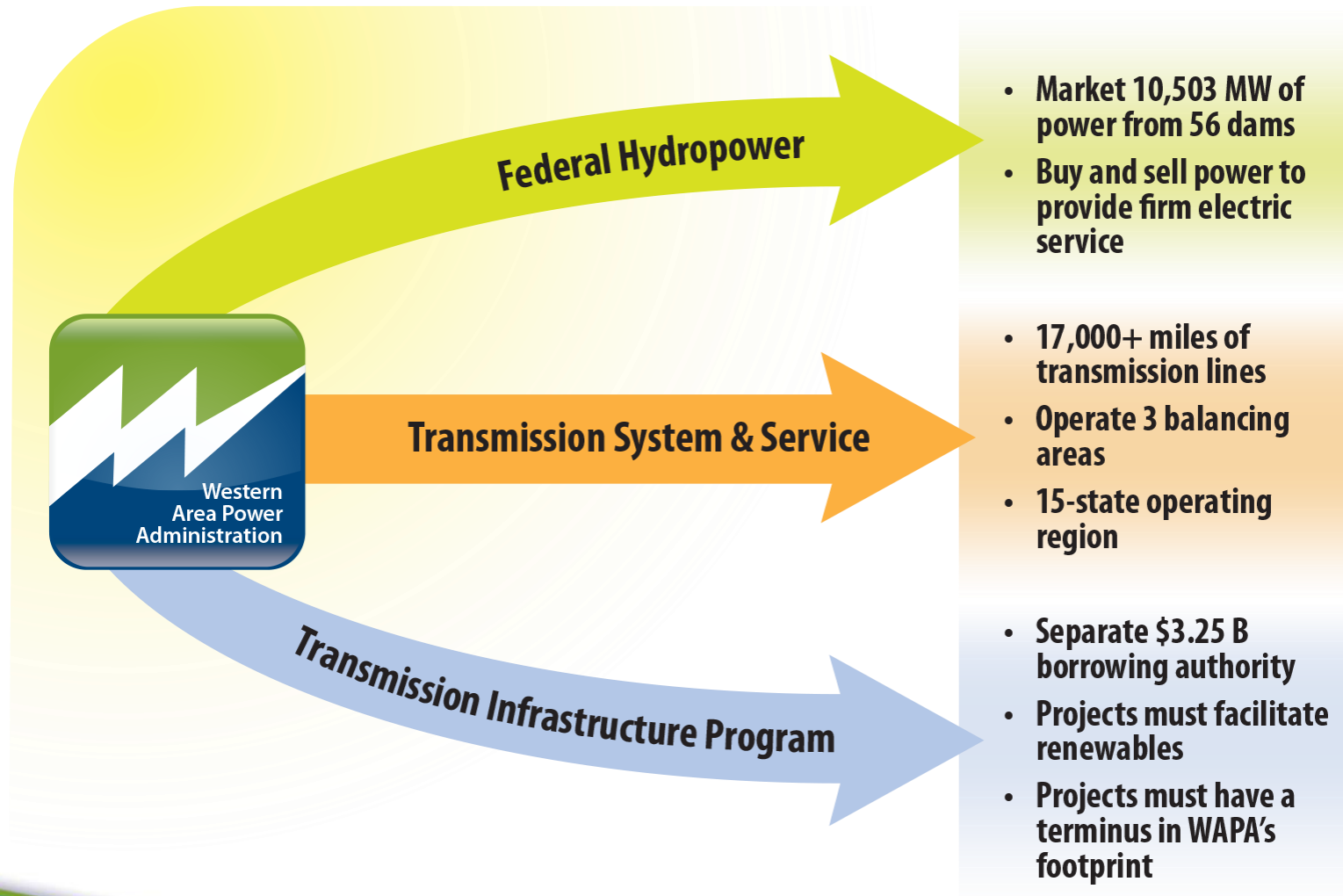
# WAPA: Who we are

## Flood Control Act of 1944

“ ... encourage the most widespread use ... at the lowest possible rates consistent with sound business principles ... ”

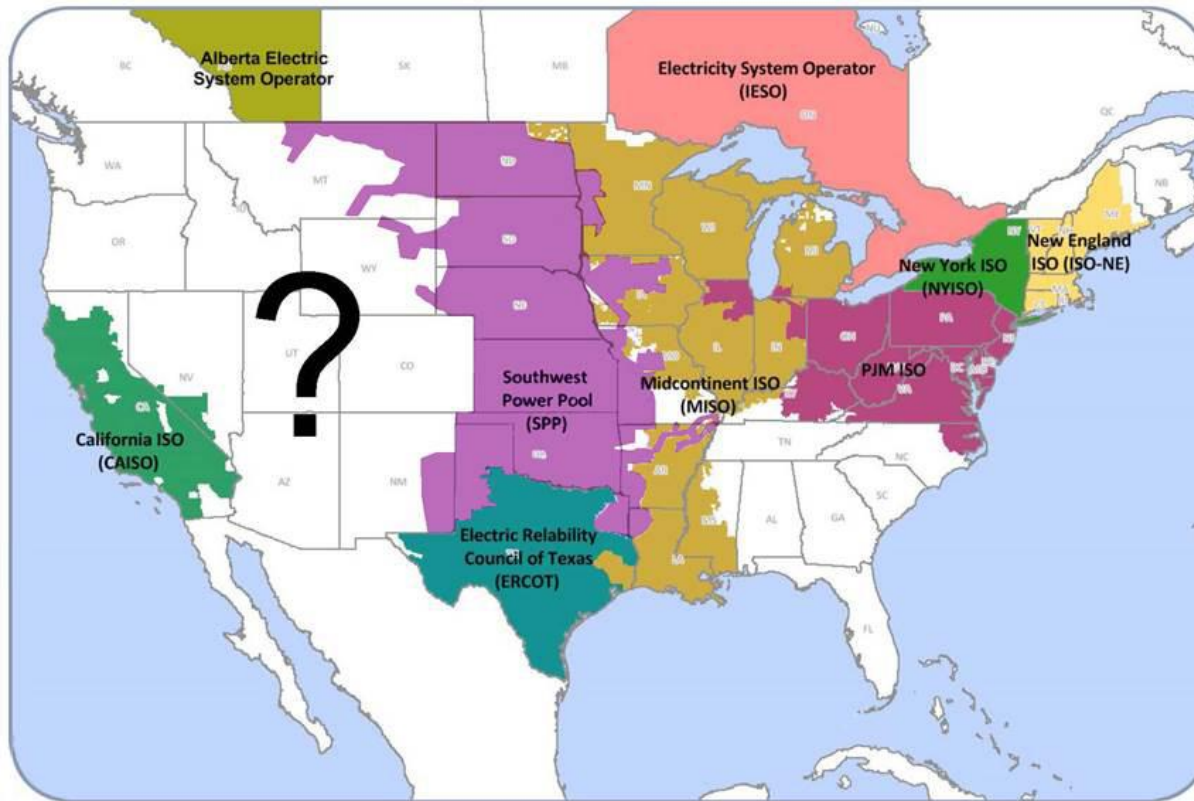


# WAPA: What we do



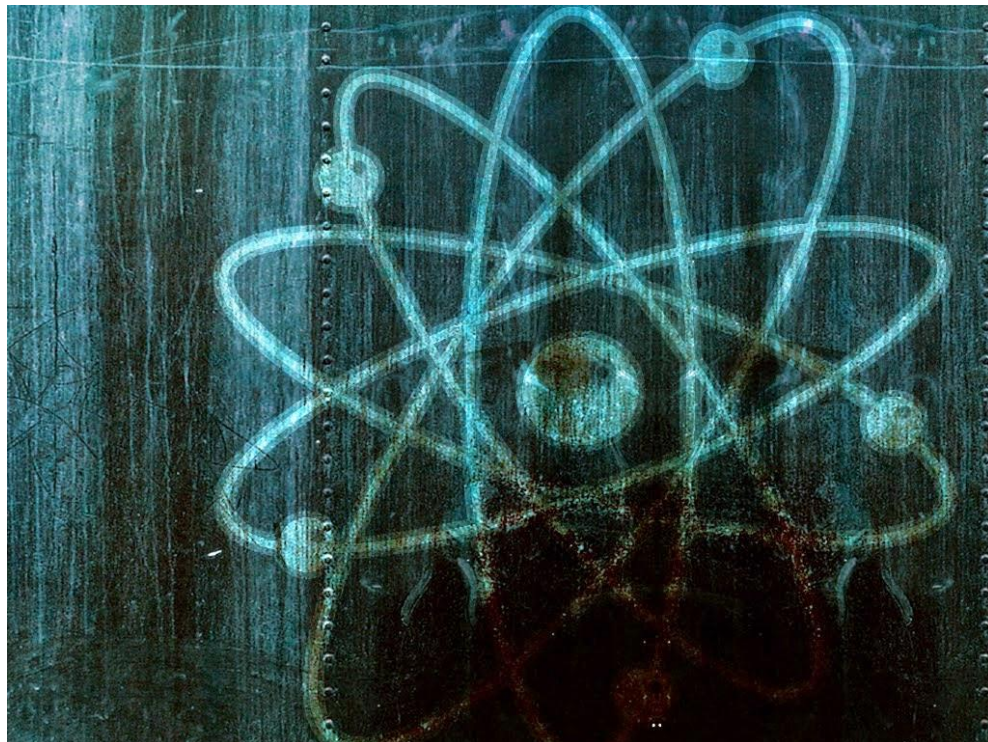
# Why markets at all?

Potentially efficient, but ...



# Theoretically ...

Markets make for equal partners reducing friction in trading of equal electrons.

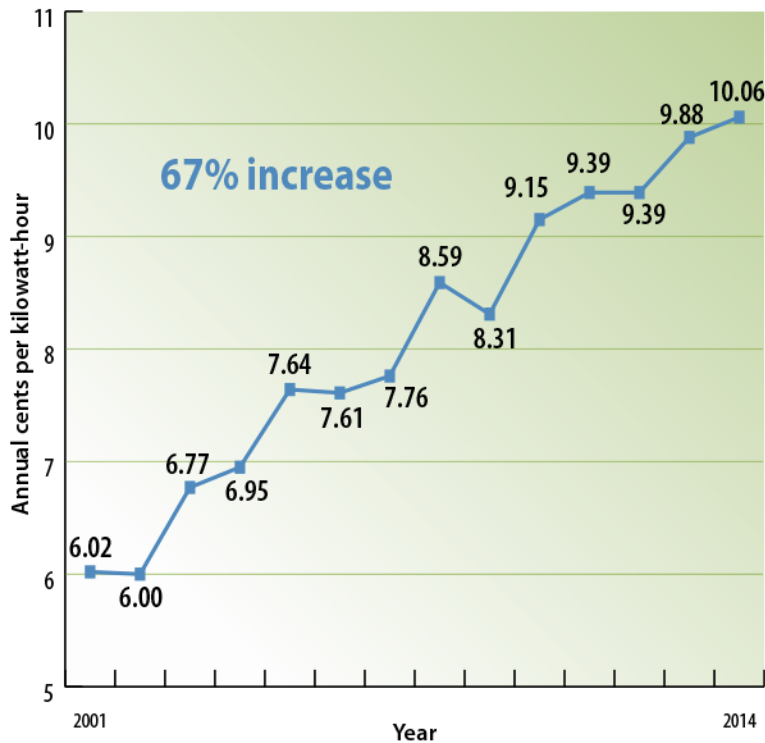




# Cost of electricity vs. inflation

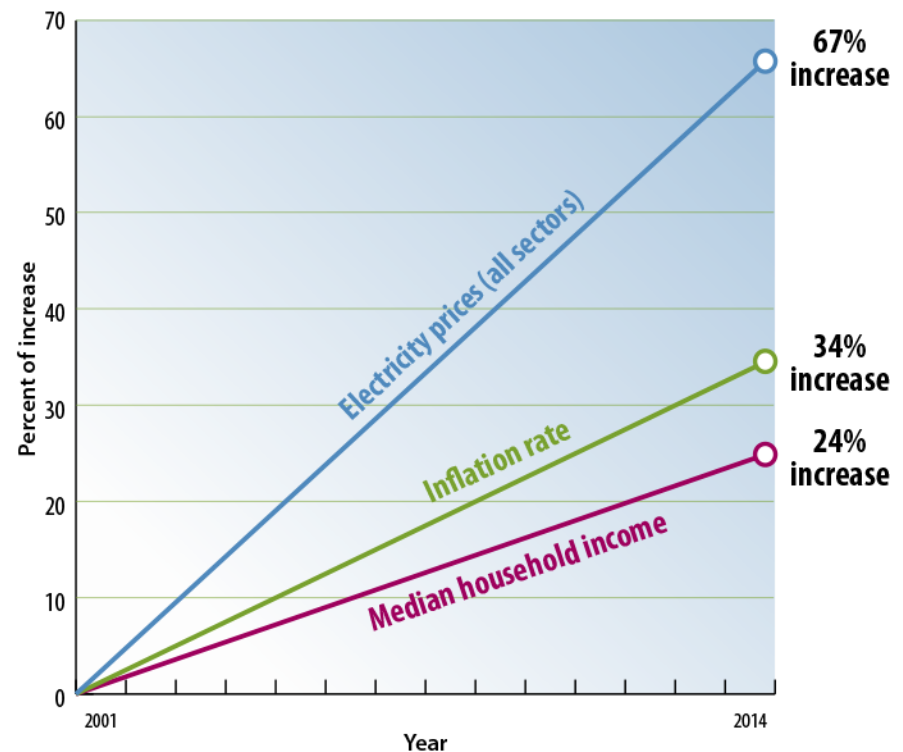
**Average retail price of  
Colorado electricity (all sectors)**

2001-2014



**The increasing cost of energy  
in Colorado**

2001-2014



*Source: Energy Policy Center, Feb. 15, 2016*

# Market challenges for WAPA

**Western Area Power Administration – FY 2017 Composite Rates  
And Comparable Market Rates – long-term and spot/peak pricing (wholesale – not retail)**

WAPA region	WAPA's Long-Term Firm Composite Rate <i>Weighted Average for region</i> (\$/mWh)	Average Long-term Market –Based Electricity Prices (\$/mWh)	Average On-Peak Spot Market-Based Electricity Prices (no transmission) (\$/mWh)
Colorado River Storage Project Management Center	<b>29.43</b>	37.00 to 73.51	30.89
Desert Southwest	<b>18.42</b>	42.92	26.80
Rocky Mountain	29.90 + .66 drought adder = <b>36.56</b>	57.70 to 73.53	34.84
Sierra Nevada	31.60 +15.59 CVPIA environmental assessment = <b>47.19</b>	30.81	33.64
Upper Great Plains	21.42 6.83 drought adder = <b>28.25</b>	33.22 to 61.33	24.03

# Making market decisions

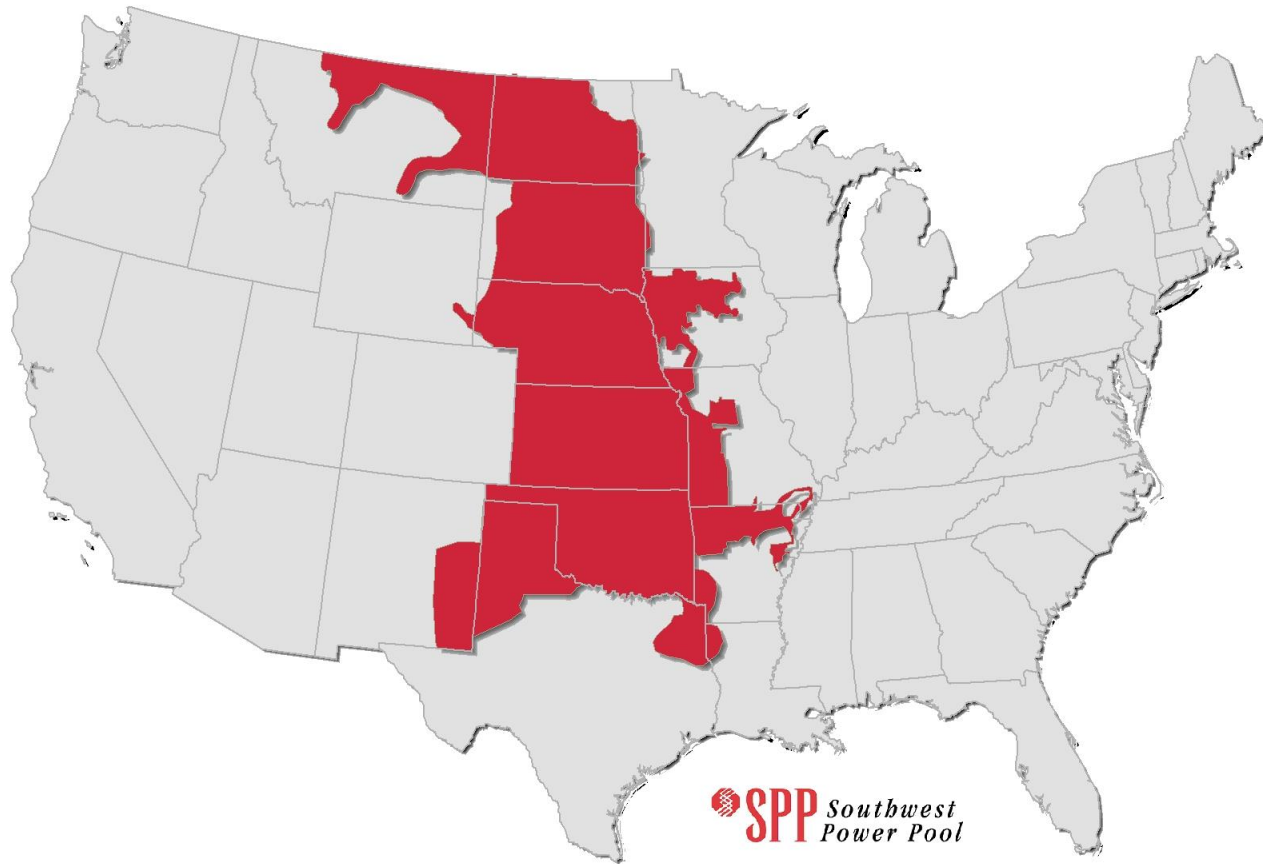
- Have studied RTO participation since 1990s
- Began evaluating SPP in 2011
  - Examined three options
  - Six criteria across each option and risk
    - Trade benefit
    - Administrative costs
    - Transmission expansion
    - Capacity benefits
    - IS transmission revenue
    - Drive out impacts



- Joining offered the least risk and most benefit to customers
- Same matrix resulted in decision NOT to join CAISO (2015)



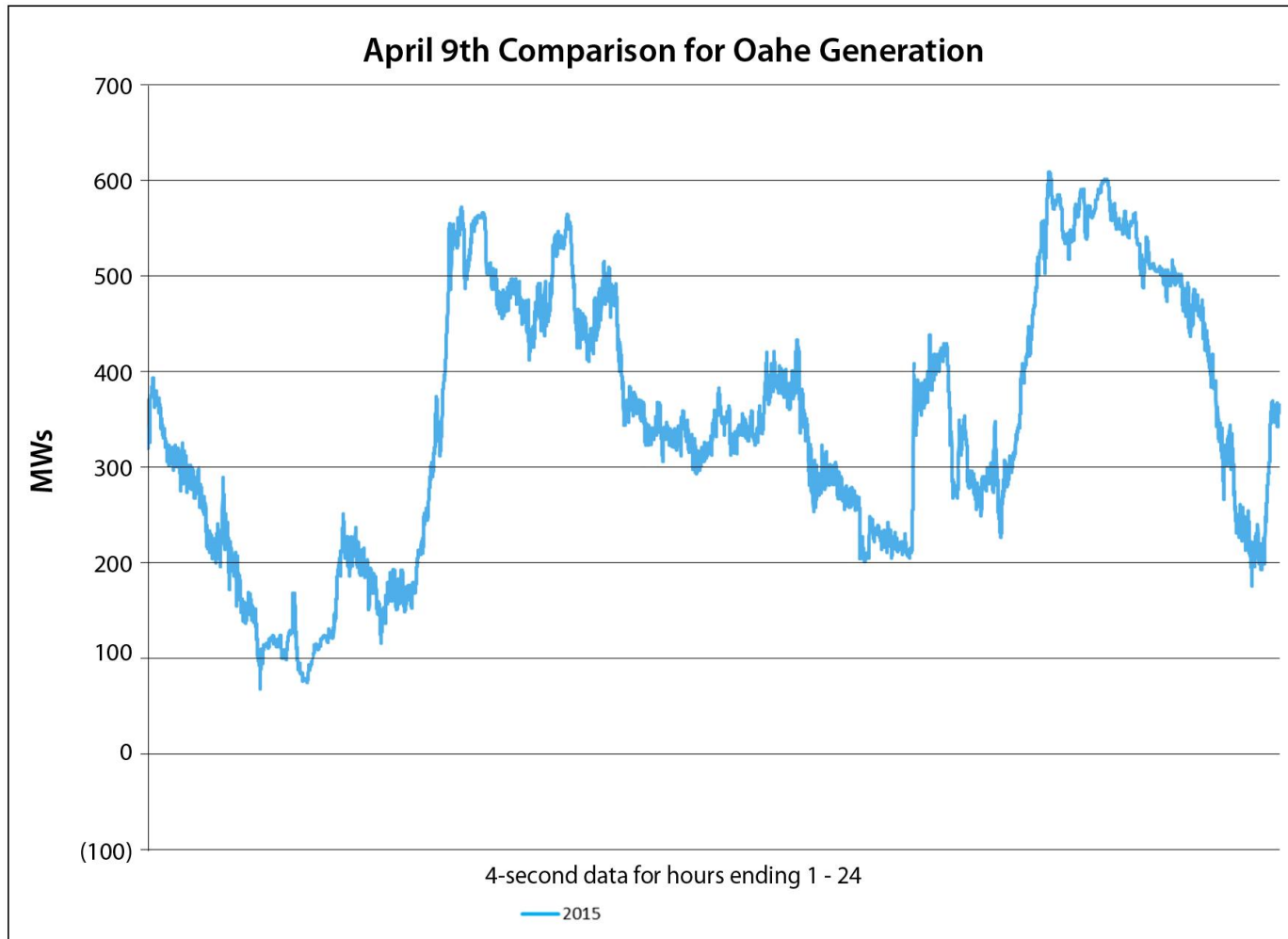
# Southwest Power Pool



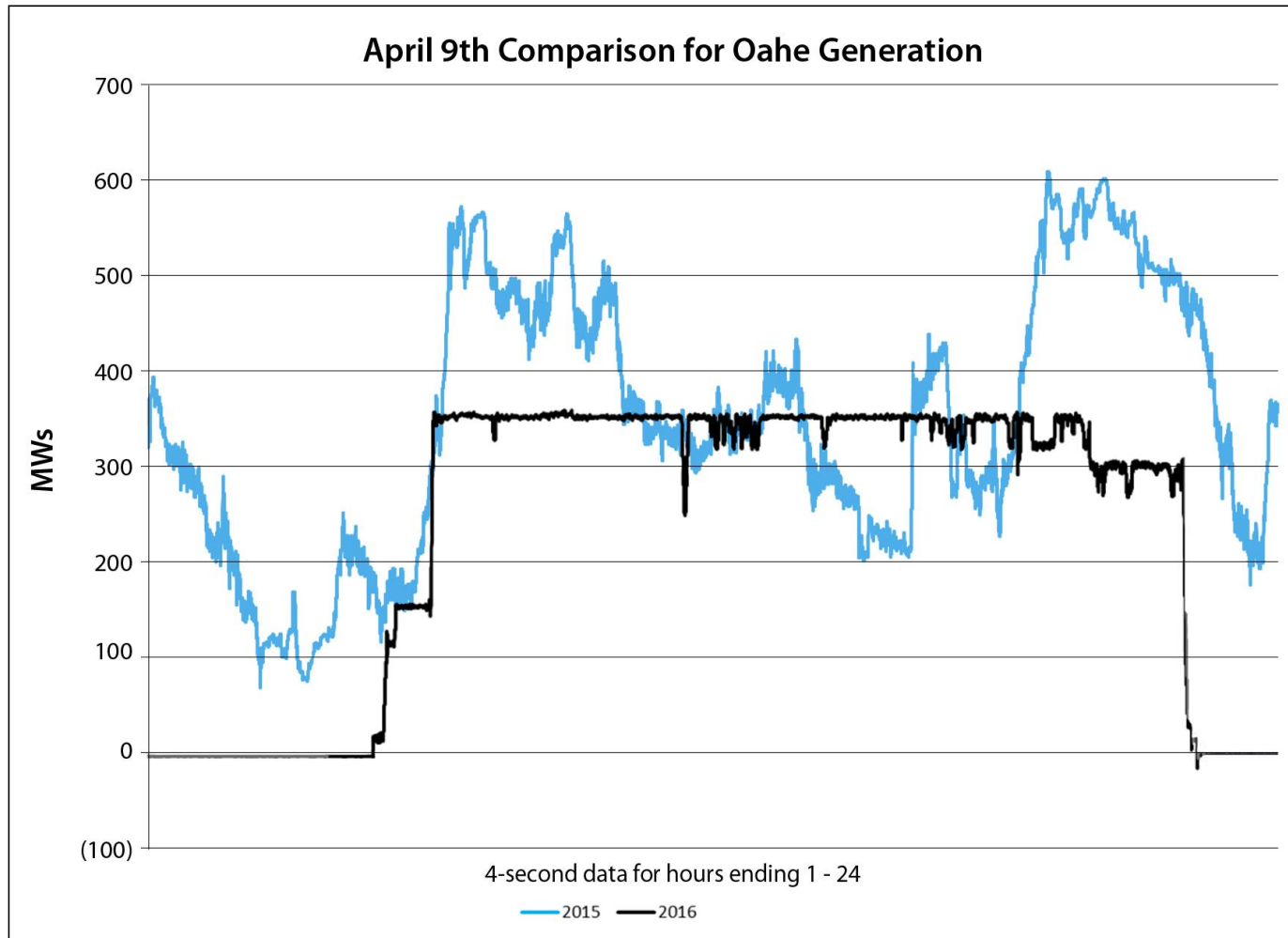
# Change is upon us



# Oahe generation

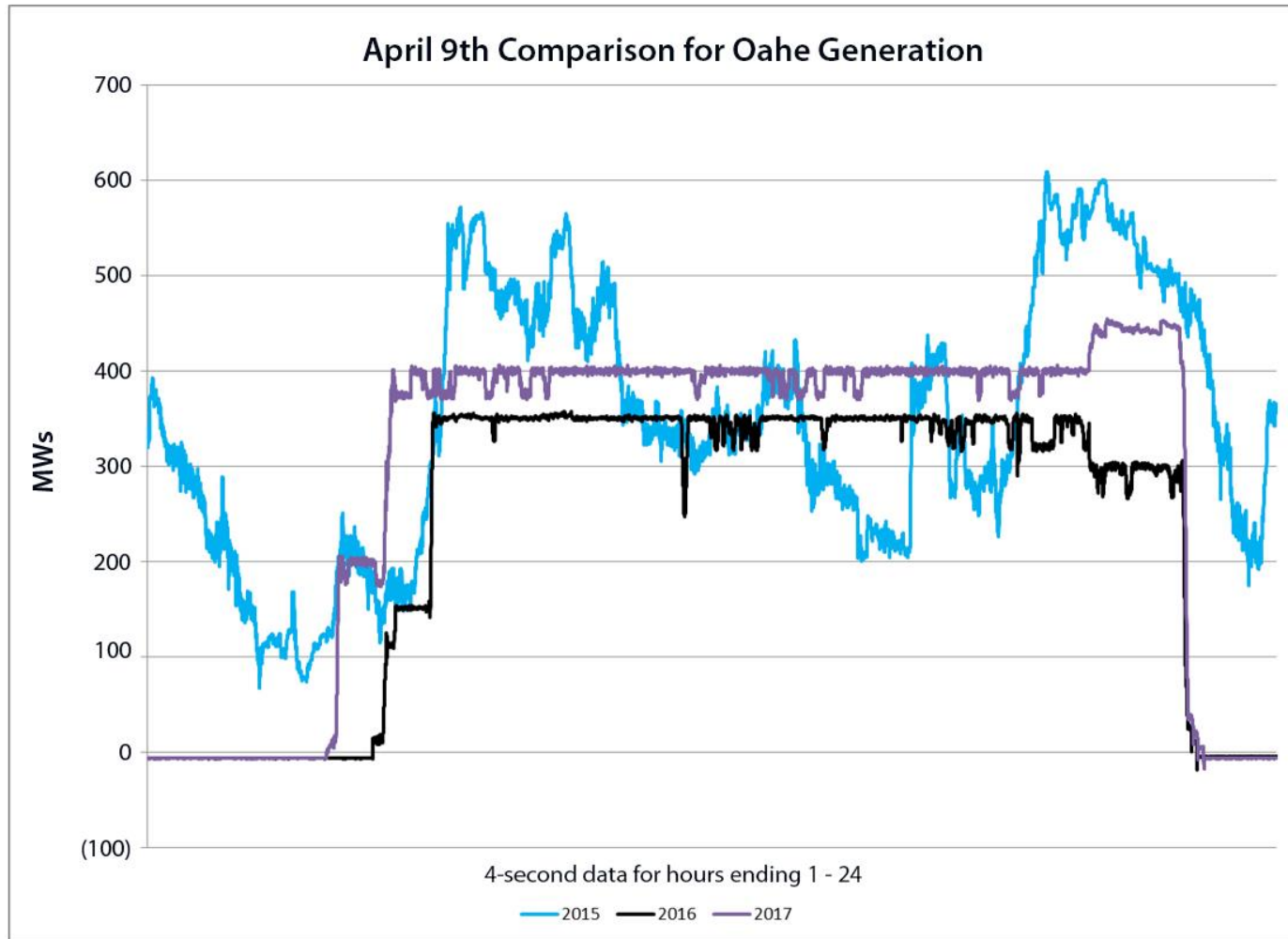


# Oahe generation



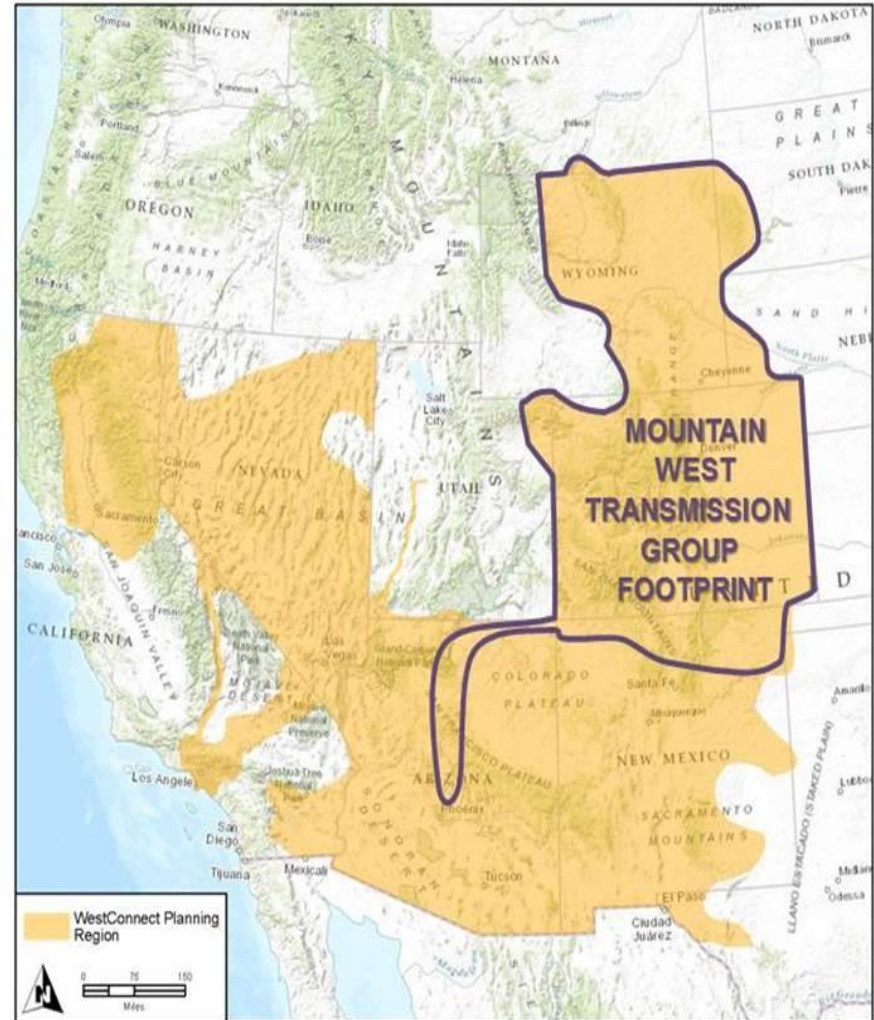


# Oahe generation



# Mountain West

- Formed 2013
- Evaluating options
- Announced decision to pursue talks with SPP
- Making decision within 60 days
- If applicable, market implementation 2019



# Essential Reliability Services





# Change brings opportunities

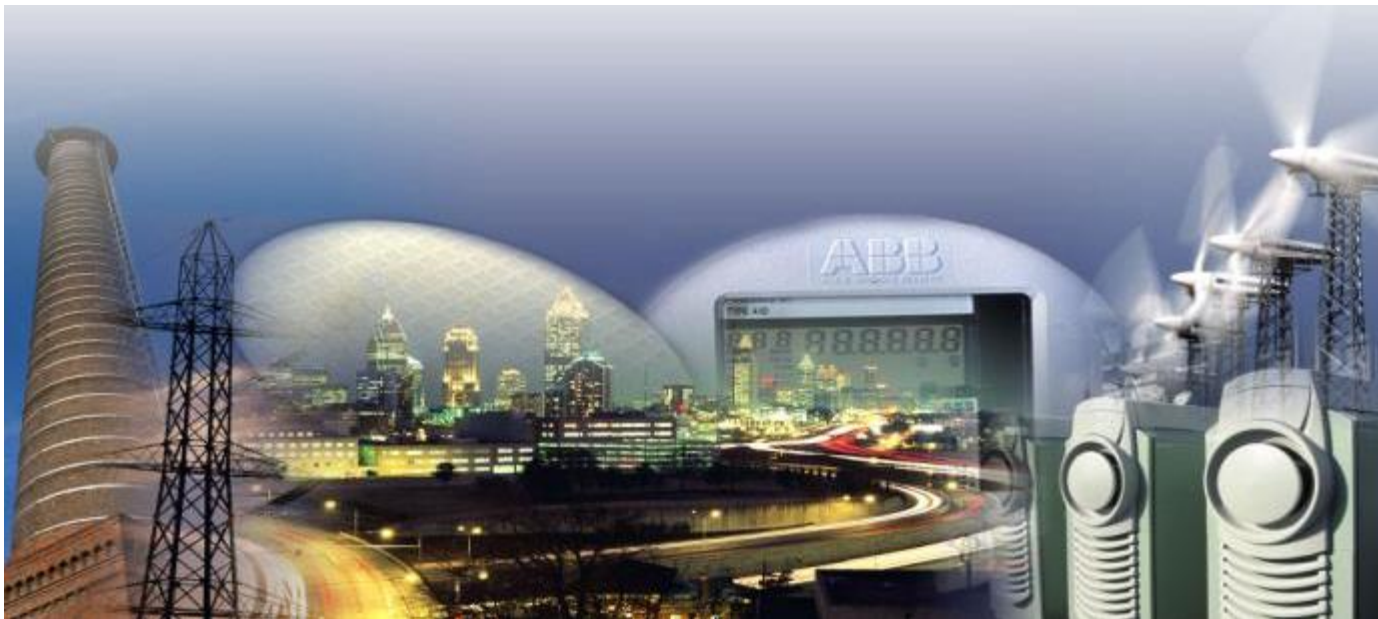
- Infrastructure considerations
- Increased regulation
- Intermittent resources
- Varying hydro production
- Customer-side resources
- Changing markets
- Security





# Fundamental change

The challenge for the utility of today is not only what is real but what is perceived as real.



# Radical thoughts ...

- kWh is dead
- All-you-can-eat electricity
- Time-of-purchase rates NOT time-of-use rates
- Utility is the network provider
- Markets replace IRPs

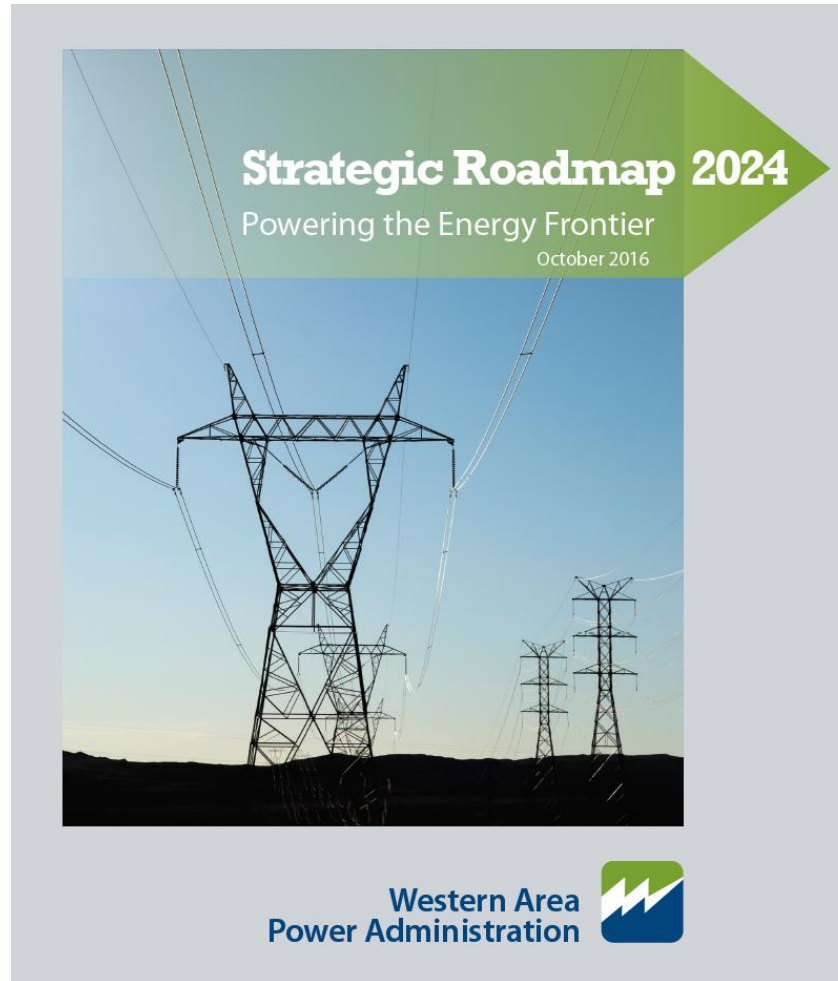


# Economic challenge

How can we manage in a  
Twitter-centric world?



# What are we doing about it?





# Shift in strategic thinking

- Broader perspective
- Data-driven decisions
- Industry impacts to customers



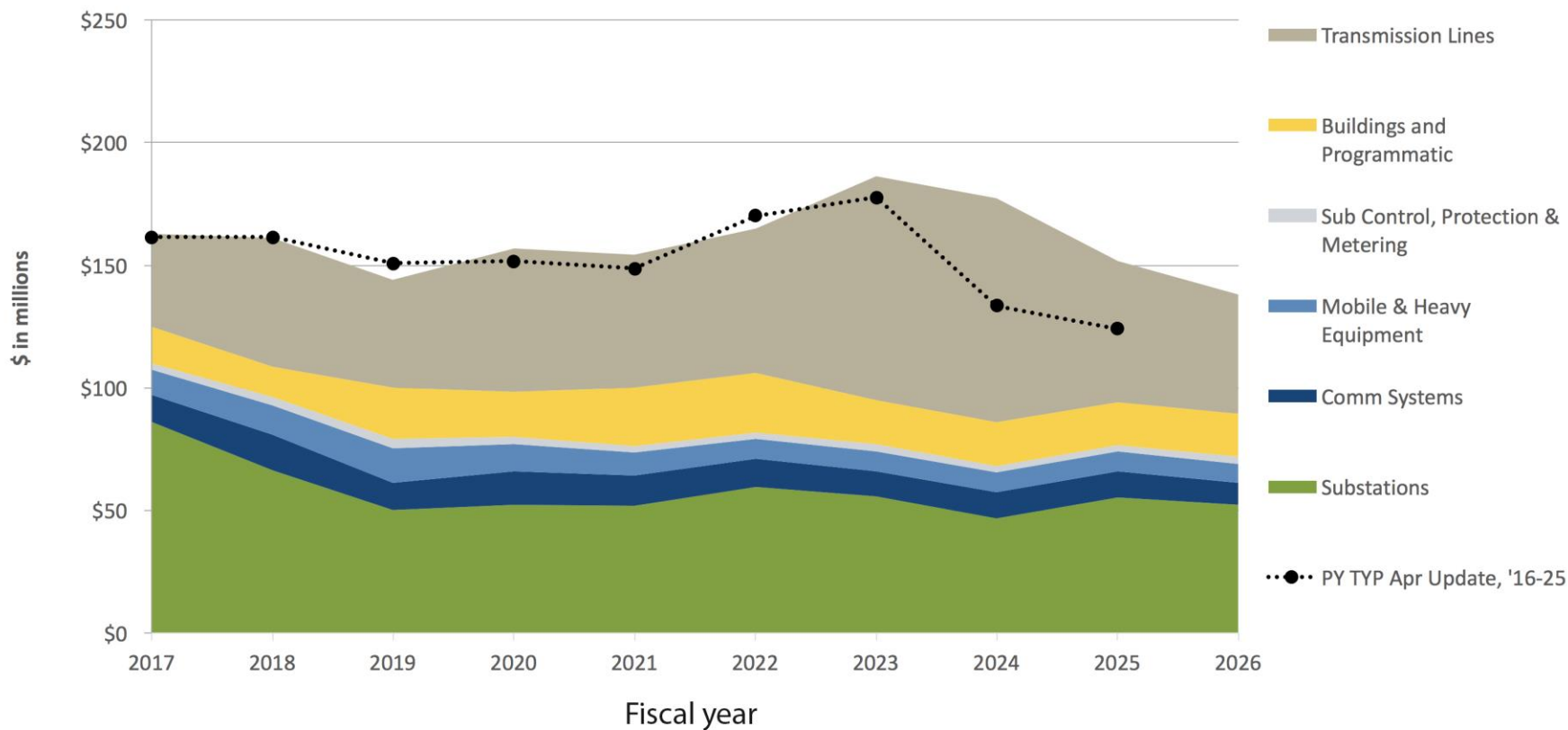
# What that looks like

- 10-year planning horizon
- Cybersecurity
- Lifecycle considerations
- Physical security
- Asset Management
- Continuous Process Improvement



# Modernizing assets

WAPA-wide 10-year Capital Investment Plan  
FY 2017-2026 estimates as of October 2016



# Key takeaways

*Focus on value and business excellence.  
Continue delivering on mission.*





# Contact/follow me

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